



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,794	07/10/2003	Panayotis Andricacos	20140-00302-US /YOR920030	3511
30678	7590	11/15/2006	EXAMINER	
CONNOLLY BOVE LODGE & HUTZ LLP P.O. BOX 2207 WILMINGTON, DE 19899-2207			SMITH, NICHOLAS A	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 11/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/615,794

Applicant(s)

ANDRICACOS ET AL.

Examiner

Nicholas A. Smith

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Claims 1-15 have been cancelled. Claims 16-26 are newly presented claims.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 16-20 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seita et al. (US Patent 6,881,319) in view of Chalyt et al. (US Patent 6,749,739), further in view of Blachier et al. (US Patent 6,569,307) and further in view of Kopp (US Patent 6,083,374).
4. In regards to claim 16, which is a rewrite of previously presented claim 15 and part of previously presented claim 13, Seita et al. in view of Chalyt et al. and further in view of Blachier et al. is applied to the claim for the same reasons as stated on pp. 3-5 of the previous office action in regards to previously presented claim 15. In regards to part of previously presented claim 13, Seita et al. in view of Chalyt et al., further in view of Blachier et al. and further in view of Kopp is applied to the claim for the same reasons as stated on p. 6 of the previous office action.
5. In regards to changing previously used term "threshold concentration" to "VFM threshold ratio," this does not change the scope of the claims. In regards to changing the preamble from "a method of measuring a stability of a plating bath" to "a method of

Art Unit: 1742

operating a plating bath comprising," the claims now reads more actively on the plating process. This is disclosed in the prior art (Seita et al., abstract).

6. In regards to claims 17-20 and 24, which is a rewrite of previously presented claims 2-5 and 9, Seita et al. in view of Chalylt et al. and further in view of Blachier et al. is applied to the claims for the same reason as stated in p. 5 of the previous office action.

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seita et al. in view of Chalylt et al., further in view of Blachier et al. and further in view of Kopp as stated above in regards to claim 18, and further in view of Skoog et al. (*Fundamentals of Analytical Chemistry* 7th Ed.; Saunders College Publishing, Forth Worth, 1996, pp. 701-702 and 708-709) as stated in p. 5 of the previous office action in regards to previously presented claim 6.

8. Claims 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seita et al. in view of Chalylt et al., further in view of Blachier et al. and further in view of Kopp as stated above in regards to claim 17, and further in view of Talasek et al. (US2004/0108213) as stated in p. 5 of the previous office action in regards to previously presented claims 7-8.

9. Claims 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seita et al. in view of Chalylt et al., further in view of Blachier et al. and further in view of Kopp as stated above in regards to claim 16, and further in view of Kopp as stated in p. 6 of the previous office action in regards to previously presented claims 13-14.

Response to Arguments

10. Applicant's arguments filed 9/12/2006 have been fully considered but they are not persuasive.
11. Applicant argues:
 - a. Chalyt et al. describes a qualitative process of determining a VFM ratio not a quantitative process as claimed.
 - b. Chalyt et al. does not provide specific example of other types of breakdown components or how to control such a process.
 - c. Applicant states that the claimed method of not requiring a fixed minimum level of breakdown product in the bath provide a less rigorous control of the plating bath chemistry and therefore provide flexibility in the process as is an improvement over existing methods.
12. Examiner responds:
 - a. Examiner agrees that Chalyt et al. takes measurements of breakdown products and original compounds by using a method that results in relative measurements (Chalyt et al, col. 7, lines 31-35), not absolute concentrations. The resulting ratio as found by Chalyt et al. would be equivalent to applicant's VFM ratio, except that it would be different by a factor of X . X would be a measurement dependent ratio – ratio of (ratio of endpoint volume fractions to absolute concentration for breakdown products) to (ratio of endpoint volume fractions to absolute concentration for original compound). X would depend on conditions used to take a

measurement. One of ordinary skill in the art would realize to keep the same conditions while measuring to make such a measurement and therefore the value of *X* would be moot. Furthermore, one of ordinary skill in the art would realize all quantitative measurements, one as such as disclosed by Chalyt et al., have calibrations to be made to get absolute measurements.

- b. Chalyt et al. is not limited to only suppressor breakdown products, but is concerned with "analysis of organic additives and contamination in plating baths" of which accelerators are naturally included (Chalyt et al., col. 1, lines 14-16). Furthermore, Chalyt et al. discloses a method of controlling breakdown products by adjusting bleed and feed rates (col. 7, lines 41-44).
- c. Statements of "improvement over existing methods" for applicant's claimed method need to be in declaration form to be viewed as evidence.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

14. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not


Art Unit: 1742

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas A. Smith whose telephone number is (571)-272-8760. The examiner can normally be reached on 8:30 AM to 5:00 PM, Monday through Friday.

16. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571)-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

17. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


ROY KING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700